

Néo vaisseaux choroïdiens compliquant une photocoagulation par laser Argon pour une chorioretinopathie séreuse centrale

Choroidal neovascularization following argon laser photocoagulation for central serous chorioretinopathy

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RÉSUMÉ

Introduction : La néo-vascularisation choroïdienne est une complication rare après photocoagulation pour une chorioretinopathie séreuse. Son management est sujet de discussion et aucun consensus n'est encore établi. La thérapie des anti VEGF a émergé comme le traitement de choix. Nous rapportons le cas d'une patiente qui a développé des néo-vaisseaux choroïdiens iatrogène suite une photocoagulation rétinienne par laser argon pour une chorioretinopathie séreuse centrale. La patiente a été traitée par des injections intra-vitréennes de Bivacizumab.

Le but de notre papier est de montrer l'efficacité et la sécurité des injections des anti VEGF et de discuter les alternatives thérapeutiques au laser argon pour le traitement de la chorioretinopathie séreuse.

Observation : Nous rapportons le cas d'une femme enceinte, âgée de 35 ans, diagnostiquée en août 2014 avec une chorioretinopathie séreuse aiguë de l'œil droit. La patiente a été traitée par photocoagulation focale au laser argon pour les points de fuite. En décembre 2015, la patiente se plaint de métamorphosie du même œil. L'acuité visuelle a été conservée à 10/10. Le fond d'œil a montré une membrane néo-vasculaire, correspondant à la zone de photocoagulation antérieure. L'OCT ainsi que l'OCT-A ont démontré la membrane néo-vasculaire. La patiente a reçu 3 injections intra vitréenne de Bivacizumab et a été suivie régulièrement. Elle est asymptomatique au bout de 3 ans de traitement.

Conclusion : La néo vascularisation choroïdienne est une complication iatrogène rare à la photocoagulation au laser Argon. Les injections intra vitréennes des anti VEGF semble être un traitement promoteur pour une telle complication.

Mots-clés

Chorioretinopathie séreuse, photocoagulation, néo-vascularisation choroïdienne.

SUMMARY

Introduction: Choroidal neovascularization (CNV) is a rare complication after laser photocoagulation for central serous chorioretinopathy (CSCR). That's why, little is known about its management. Anti-VEGF therapy has emerged as the treatment of choice in patients with CNV. We report a case of a patient who developed iatrogenic CNV after having argon laser photocoagulation for a CSCR, treated with intravitreal injections of Bevacizumab.

Aim: The goal of our paper is to show the efficacy and safety of the intravitreal injections of antiVEGF and discuss the alternative of argon laser photocoagulation to avoid complications.

Case presentation: A 35-year-old pregnant woman diagnosed in August 2014 with an acute CSCR in the right eye. The patient was treated by a focal photocoagulation of the leakage point. In December 2015, she was complaining of metamorphopsia in the same eye. The BCVA was 10/10 in the right eye, and the fundus examination showed grayish-white neovascular membrane, which corresponded to the area of the previous photocoagulation. The fluorescein angiography, OCT and the OCT angiography demonstrated the choroidal neovascular membrane. The patient received 3 intravitreal injections of Bevacizumab at monthly intervals in the right eye. The patient was followed-up at regular intervals and she became asymptomatic during three years.

Conclusion: Choroidal neovascularization may be an iatrogenic complication after argon photocoagulation in CSCR. Intravitreal injections of anti VEGF appear to be a promising treatment option for iatrogenic CNV due to photocoagulation.

Key-words

Serous chorioretinopathy, laser photocoagulation, choroidal neovascularization

INTRODUCTION

Central serous chorioretinopathy (CSCR) is a chorioretinal disorder (1) that affects typically men between 20 and 50 years old; but it was reported in women, particularly in pregnancy (2,3)

Generally, CSCR is characterized by a good prognosis with spontaneous recovery on few weeks, in approximately 90% of patients (2,4). However, it can lead to an irreversible vision loss, due to progressive and permanent photoreceptor damage or retinal pigment epithelium (RPE) atrophy, especially in chronic CSCR (1,2). There is no standard for the treatment of a persistent focal leakage: many tools can be used; laser photocoagulation is often successful in achieving retinal reattachment (1,2,3,5,6). However, choroidal neovascularization (CNV) is a rare but a well recognized complication of laser photocoagulation for CSCR. We report the clinical course of a patient with CSCR who developed an iatrogenic CNV after argon photocoagulation of the leakage point.

CASE REPORT

A 35-year-old pregnant woman with an acute CSCR (figure 1) of the right eye diagnosed on August 2014 and treated with argon laser of the leakage point.). In December 2015 (18 months later), the patient was referred to us, she was complaining of metamorphopsia in the right eye. The best corrected visual acuity (BCVA) in the right eye was 10/10. The fundus examination and the auto-fluo photography of the right eye showed grayish-white neovascular membrane, which corresponded to the area of the previous photocoagulation (figure 2), with a subretinal hemorrhage (figure 2). Multimodal imaging (fluorescein angiography (FA), spectral domain OCT (OCT SD), OCT angiography (OCT A)) confirm the presence of neovascular membrane (fig 2). The patient received an intravitreal injection (IVI) of 1.25 mg Bevacizumab in the right eye (figure 3). We decided to consolidate the positive outcome with 2 others IVI of Bevacizumab at monthly interval and monitoring with PRN monitoring. The patient is monitored since three years with stable acuity, fundus examination, SD OCT and OCT A. No more injection was required during three years.

DISCUSSION

The CNV is a rare complication of the laser

photocoagulation in CSCR. It has been reported that 1-5% of patients developed CNV after laser photocoagulation for CSCR (7,8).

The pathogenesis is still discussed. The literature review concluded that the photocoagulation induces a focal rupture of the Bruch's membrane and the development of the CNV consequently (3,2,5). But the chronic decompensation of the RPE is not removed as responsible of the CNV and the development of choroidal neovascularization can also occur without photocoagulation (3,2,5).

In our case, the neovascularization was related to the photocoagulation: considering the temporal sequence of the events and the fact that the areas of CNV in the current case corresponded to the spots of photocoagulation.

In the other hand, this neovascularization was diagnosed 18 months after photocoagulation; in the literature, the mean period of the development of CNV was from 1 to 24 months (3). This interval can be related to a late diagnosis or a juxta-foveal CNV with slow progression and without remarkable loss of vision.

The management of CSCR complicated by CNV can evolve from a simple observation without any intervention to submacular surgery, PDT and anti-VEGF injections (3,5,6).

The anti VEGF therapy is considered as a revolution in the treatment of the CNV, whatever the pathology (3,9). The injection's protocol is not yet defined. Many regimens are proposed; from one injection and PRN to 3 successive injections and PRN. The choice of the molecule is still controversial and whatever bevacizumab or ranibizumab seems to have the same efficacy in this indication (3,10).

Recently, the micropulse diode laser was suggested as a better alternative to argon laser in patients with CSCR: choroidal neovascularization have thus far not been described with the micropulse laser (6).

Little is known about the natural course of iatrogenic choroidal neovascularization secondary to photocoagulation for CSCR. Anti VEGF therapy seems to be a promising treatment option but further verifications are needed.

CONCLUSION

When CSCR is not spontaneously resolved in 3 to 4 months a treatment should be considered. The argon laser photocoagulation is a promoted treatment for

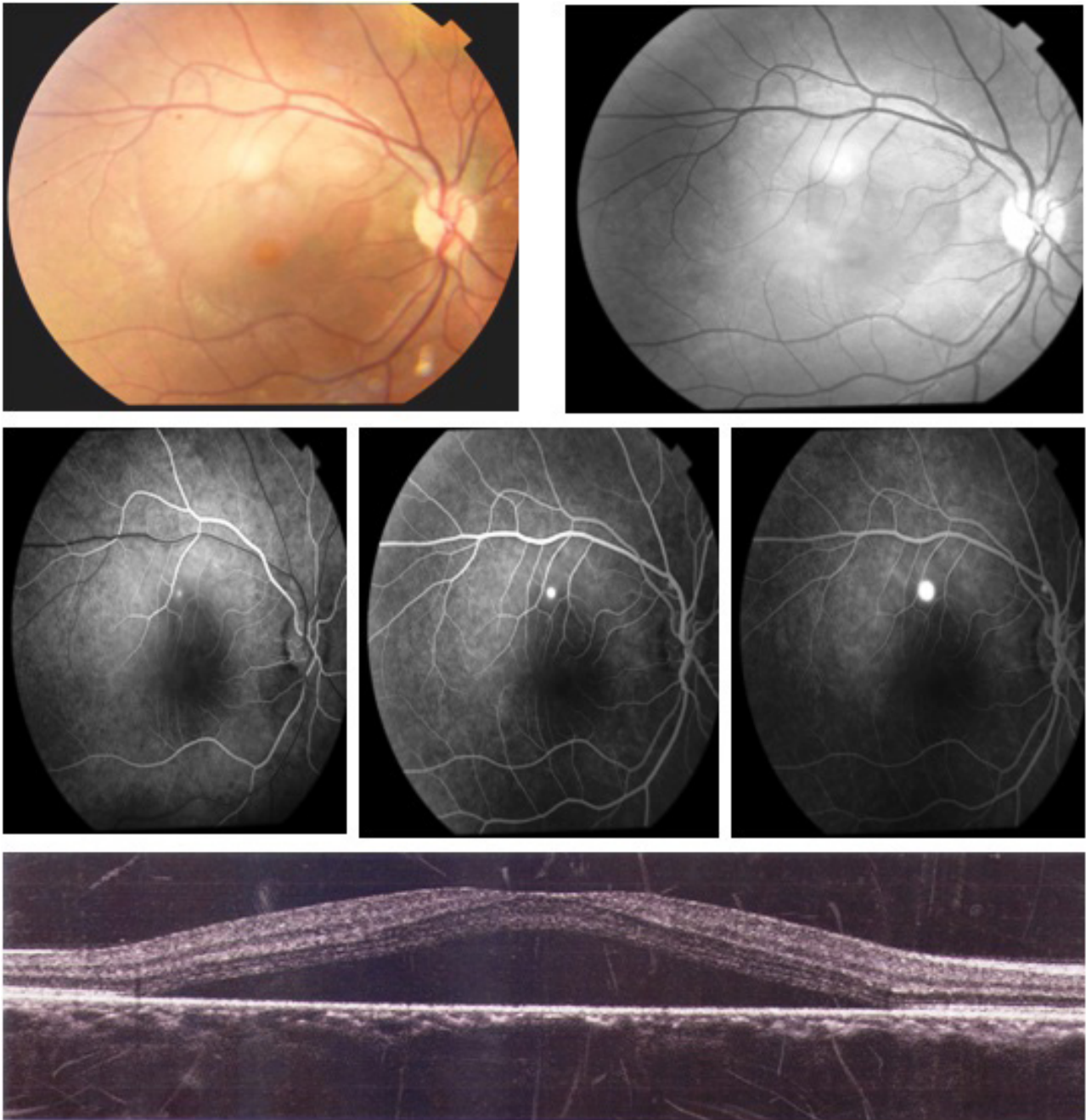


Figure 1: Fundus photograph, red free fundus photograph, Fluorescein angiography and optical coherence tomography (OCT) showing the serous retinal detachment and leakage point.



Figure 2 : Fundus photograph, red free fundus photograph, Fluorescein angiography ,optical coherence tomography (OCT) and angio OCT demonstrating the subfoveal choroidal neovascular membrane, corresponded to the area of the previous photocoagulation.



Figure 3: One month after the first injection of Bevacizumab: fundus examination: disappearance of the hemorrhagy near to the neovascular membrane. OCT SD: disappearance of the serous retinal detachement and fibrosis's formation.

leaking point. However, this treatment can cause collateral damage such as iatrogenic CNV which can be a major cause of definitive loss of vision. The anti VEGF appears to be a promising treatment option for CNV due to photocoagulation. Larger studies are required to confirm that efficacy and to compare the different anti VEGF agents in the management of the laser induced CNV.

List of abbreviations:

CSCR : central serous chorioretinopathy.

RPE : retinal pigment epithelium

CNV : choroidal neovascularization.

BCVA : best corrected visual acuity

FA: fluorescein angiography

SD OCT: spectral domain ocular coherence tomography.

IVI: intravitreal injection

VEGF: vascular endothelial growth factor.

PDT: photodynamic therapy.

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